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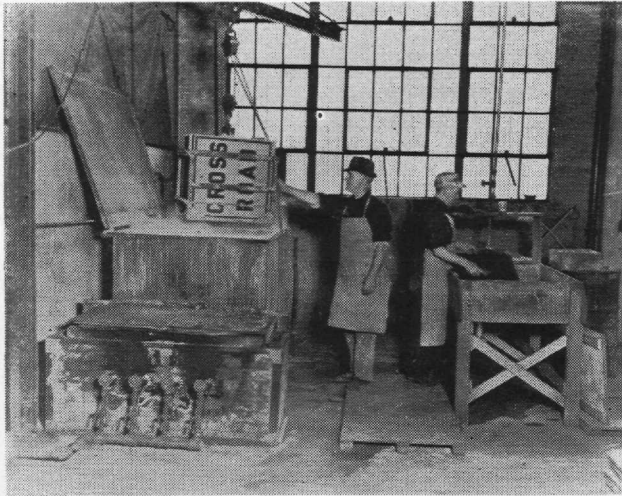
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THE GUIDING HAND

By Gordon D. Shisler

Photos Courtesy State of Ohio, Department of Highways



Removing The Old Finish.

Do you believe in signs? Regardless of the recent publicity against having the highways cluttered up with these silent symbols, most of us will agree that some of them are necessary. Suppose, for a moment, that we try an experiment. Imagine the highways of Ohio stripped of their route markers, warnings, and direction signs. Then (in your imagination), turn loose in Cincinnati, an innocent motorist unfamiliar with the highways, and tell him to find his way to Cleveland. Where he would finish, however, is beyond the scope of this article. The point is, briefly, that the motorist has a very definite need for some sort of assistance in the course of his traveling beyond the city limits. Without this help, even the well seasoned transport truck driver may have his difficulties if he should find himself in strange country. The job of providing this aid has, in the course of years, fallen to the Traffic Division of the State Highways Department which maintains its sign

shop in Columbus. The story behind these helpers of the highway is one of interest throughout.

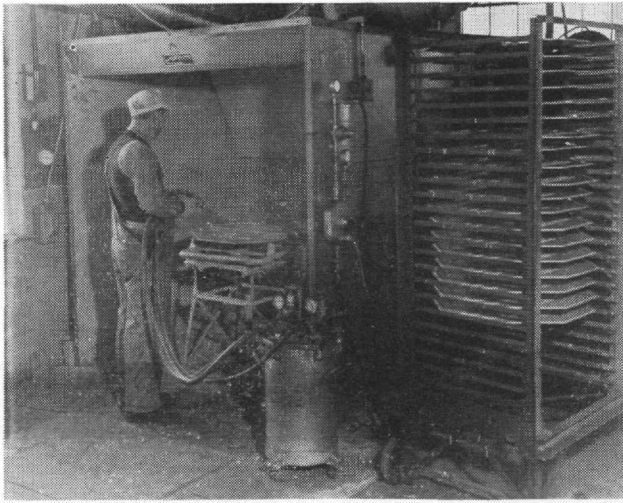
Our story starts, as you may have guessed, with the metals involved. For a considerable length of time, black steel sheeting was used for nearly all of Ohio's signs. It was found, as time passed, that it was difficult to prevent signs from rusting. However, it was impossible to use zinc coated metals since paint applied to them would soon crack and peel. Finally, it was discovered that a specially treated, galvanized sheet would solve the problem and this has since been found to be very satisfactory. The metal is now used in all metal signs made by the department.

With the exception of route markers, railroad signs, and stop signs, all signs are made on flat steel. This is for the reason that embossed signs, once damaged, are worthless as salvage, while damaged, flat signs may be used in smaller work. Embossed pieces with bullet holes (?), or otherwise damaged, must be thrown away because they cannot be satisfactorily straightened. One important advantage of the flat signs is that they may readily be refinished with a new design. This is impossible with the embossed sign.

The refinishing process starts with the removal of the old finish by immersion in a special type of heated solution. The number of times which an old metal sign may be refinished is remarkable. Even though the initial cost of the metal is greater than the old style steel, it is no long in paying for itself. A zinc coating lengthens the period between refinishing and when it finally becomes necessary, there is no rust removing problem.

Testing Height of Lettering For Visibility.

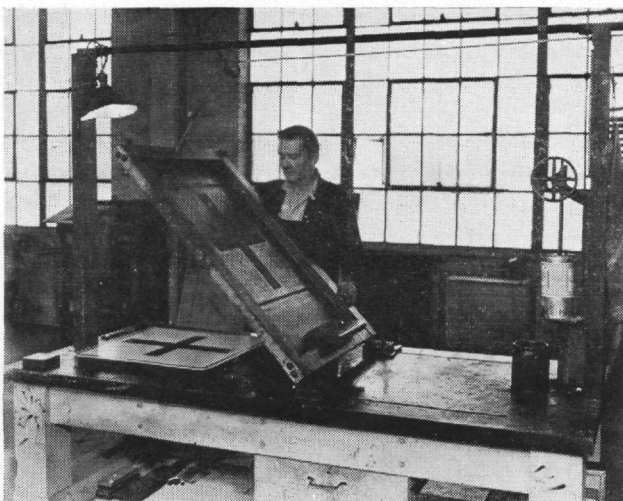




Spray Booth.

Before the enamel is applied to the sheets, they must be cleaned with a solvent, such as gasoline, to remove any grease or oil on the surface. All signs require two coats of enamel. Identical enamel is used in both coats for white work, the first being applied by a dipping process, the final by spraying. A two hour period in the oven at 175 degrees F. is the requirement for all white enamel. Contrary to the usual procedure in enamel work, an enamel with chalking characteristics is chosen because, in wearing away, the finish tends to become self cleaning. When first applied, the enamel assumes an egg-shell or semi-glossy appearance, but gradually wears to a chalky finish.

A somewhat different treatment is given the yellow sheets. Instead of using the same enamel for both coats, a darker one is used for the primary, or ground coat. This allows differentiation of the resulting finish. Yellow sheets are allowed to remain in the oven for two hours and thirty minutes at 200 degrees F., as compared with the two hours at 175 degrees F. for the white enamel. Unlike the requirements for



Silk Screen Process.

a white enamel, chalking characteristics are not tolerated in the yellow enamel. It is interesting to note, in passing, the method by which the weather resistance qualities of various enamels are tested. Sheets are exposed at 45 degree angle to the south for long periods, sometimes over a period of years. If an enamel shows undesirable qualities, such as loss of color, or peeling, its use is never authorized.

Now that our work has received its allotted two coats, let us look into the legend process. When a large number of flat sheets of a particular design are called for, a process known as the silk screen process is used. Essentially, it consists of a piece of silk bolting cloth stretched over a wooden frame. The legend design desired is left open, and the remainder blocked out with a special filler. The screen is



Ready for Crating.

simply placed over the blank sheet, semi-paste black forced through the screen, and our job is ready for the ovens. A typical screen costs \$30 and the process is, as a result, not economical for small numbers of a special design. For odd designs, such as city limit markers, a paper stencil is placed under an open screen and the paste forced through both. The cost of this open screen may be spread over a number of jobs, as it is used for all designs by simply cutting a new paper stencil. The stencil is then cleaned and set aside for later use when needed. Black designs undergo the same oven treatment accorded the white sheets.

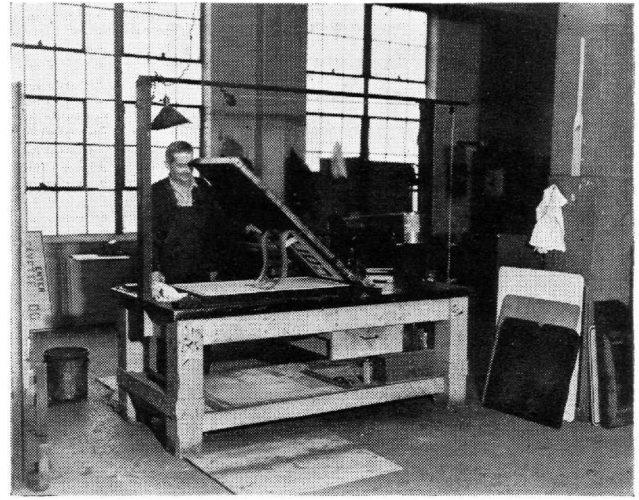
Unique among many advances in sign making is that position held by reflector, or button units. Housings, for retaining the reflector, buttons are

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made from salvaged material while the faces are of new sheet metal. Housings are fabricated by bending them in a press after they have been cut to size. These units are familiar to all motorists, and their use is increasing by leaps and bounds. There is probably no single traffic device in use which is more effective at night. The sudden appearance of these signs out of the darkness, to warn motorists of impending danger, is almost human.

Obviously, the direction and superintending of highway operations must be handled by a central authority. Direction of highway sign erection is handled by the Traffic Division through twelve division superintendents, each of whom handles one of the twelve highway divisions. These men are in turn responsible to six district Traffic Engineers, each engineer controlling two superintendents. District engineers are responsible to the Chief Traffic Engineer located in Columbus. The advancements made by highway engineers in the past decade need not be told here. Solutions to problems created by high speed traffic have, at times, seemed impossi-

ble. That the Department has done their job well, there is no doubt. What one of us does not know what can be done with a road map, car, and ten gallons of gas?



Silk Screen and Stencil Process